MEMORANDUM
April 2, 2004

To: D. Hall

Via: K. Kunaniec KHK 4/5/04

From: T. Underwood 4/2/4

Re: Outside Test OS-359; December 2, 2003 Source Test
Plant No: B2626, Valero Refining Company in Benicia
Source: S-1030; Gas Turbine with Heat Recovery Steam Generator (S-1031)
Abated by: A-60; SCR
A/C No: 2488
Cond No. 19177; NOx 7.29 lbs/hr, 2.5 ppm at 15% Oxygen; CO 10.692 lbs/hr, 6.0 ppm at 15% Oxygen; NH3 10 ppm at 15% Oxygen; POC 2.037 lbs/hr; SO2 10.75 lbs/hr; SAM 7 tpy; PM-10 4.65 lbs/hr
By: Best Environmental

I have reviewed the source test report cited above and note the following:

1) I did not witness the test.
2) All pertinent quality assurance procedures appear to have been followed.
3) The testing appears to have been conducted properly and by personnel who are familiar with proper source testing techniques.
4) Results of the testing are that the Gas Turbine was emitting less POC than the limits cited above.
5) These results demonstrate compliance with the permit conditions.

This source was in compliance with District Regulations.

TABLE #1

Valero
CoGen
TNMHC Emissions

TEST	1	2	3	AVERAGE	LIMIT
Test Location	Outlet	Outlet	Outlet		
Date	12/2/03	12/2/03	12/2/03		
Time	16:29	17:20	18:09		
Standard Temp., °F	70	70	70		
Turbine Load, MMBtu/hr	452.17	455.2	457.9	455.1	
Flow Rate, DSCFM	205,087	207,637	207,777	206,834	
O_2, %	14.27	14.31	14.27	14.28	
	9.3	9.3	9.3	9.3	
THC, ppm (Wet)	25.4	25.6	27.0	26.0	
THC, ppm (Dry)	28.0	28.3	29.8	28.7	
CH_4, ppm	27.5	27.7	27.7	27.7	
TNMHC, ppm	<1.0	<1.0	~~2.10~~ <1	~~<1.4~~ <1	
TNMHC, ppm @ 15% O_2	<0.9	<0.9	~~1.87~~ <0.9	~~<1.20~~ <0.9	
TNMHC, lbs/hr	<0.51	<0.52	~~1.08.5~~	~~<0.70~~ <0.5	**2.03**
TNMHC, lbs/day	<12.22	<12.37	~~26.00~~ <12	~~<16.86~~ 12	
TNMHC, lbs/MMBtu	<0.001	<0.001	0.00~~7~~	<0.00~~7~~	

WHERE,

ppm = Parts Per Million Concentration
lbs/hr = Pound Per Hour Emission Rate
THC = Total Hydrocarbons as Methane (MW = 16)
TNMHC = Total Non-Methane Hydrocarbons as Methane (MW = 16)
lbs/MMBtu = Pounds per million BTU

correction to Run 3 data made by T.U. ~~BAAQMD~~ BAAQMD from raw data page B-5.
T.U. 4/2/14

CALCULATIONS:

ppm @ 15% O_2 = ppm * 5.9 / (20.9-stack O_2)
lbs/MMBtu = Fd * M.W.* ppm * 2.59E-9 * (20.9/(20.9-%O_2))
Dry ppm = ppm Wet* 100/(100-H_2O%)
Fd = 8621